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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/697,789	10/26/2000	Graham Mensa-Wilmot	05516/084001	5600

22511 7590 08/01/2002

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EXAMINER

HAWKINS GAY, JENNIFER M

ART UNIT	PAPER NUMBER
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3672

DATE MAILED: 08/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/697,789

Applicant(s)

MENSA-WILMOT ET AL.

Examiner

Jennifer H Gay

Art Unit

3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 May 2002.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 October 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 15 May 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: R as found in Figure 1. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 5, 7, 8, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deane et al. (US 4,794,994) in view of Tibbitts et al. (US 6,006,846).

*Regarding claims 5, 8, and 11:* Deane et al. discloses a drill bit with the following features:

- A main body (12) with a plurality of blades (24A-E).
- A plurality of cutting elements (36A-G) mounted on the blades.
- The cutting elements including a substrate (40) and a diamond table (54). The substrate of each element is mounted in the blade so that a relief groove is formed under the diamond table. The groove extends back from the outer surface of the blade at least 40 percent of the portion of the thickness of the diamond table that does not extend past the outer surface of the blade.

Deane et al. discloses all of the limitations of the above claims except for the cutting elements being mounted on a mounting pad. As seen in the figures, Tibbitts et al. teaches a

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cutting element that is mounted on a mounting pad. The mounting pad includes a relief groove. It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have mounted the cutting elements of Deane et al. on mounting pads as taught by Tibbitts et al. in order to have provided a way to easily attach and replace cutting elements.

*Regarding claims 7 and 10*, Deane et al. and Tibbitts et al. disclose all of the limitations of the above claims except for the relief groove having a depth of 0.025 inches. However, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have formed the relief groove of Deane et al. in view of Tibbitts et al. with a depth of 0.025 inches, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

4. Claims 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deane et al. (US 4,794,994) in view of Tibbitts et al. (US 6,006,846) as applied to claims 5 and 8 above, and further in view of Butcher (6,220,117 B1).

Deane et al. and Tibbitts et al. disclose all of the limitations of the above claims except for forming the bit body from powered tungsten carbide infiltrated by a binder alloy. Butcher teaches a method of forming a drill bit. The drill bit is formed from a powered metal, tungsten carbide for example, that is infiltrated by a binder alloy. (See col. 3, line 25-col. 3, line 47). It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have formed the drill bit body of Deane et al. in view of Tibbitts et al. from powered tungsten carbide infiltrated by a binder alloy as taught by Butcher in order to have provided a drill bit that exhibited a relatively high strength compared to conventional drill bits (see col. 2, lines 43-47).

### ***Response to Arguments***

5. In view of applicant's amendment, the objections to the drawings, except that listed above, and the specification have been withdrawn.

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6. Applicant's arguments with respect to claims 5-11 have been considered but are moot in view of the new ground(s) of rejection.

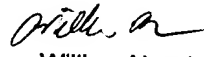
### **Conclusion**

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer H Gay whose telephone number is (703) 308-2881. The examiner can normally be reached on Monday-Friday, 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (703) 308-2151. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7687 for regular communications and (703) 305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

JHG   
July 30, 2002

  
William Neuder  
Primary Examiner